

Notice of Allowability	Application No.	Applicant(s)	
	09/475,487	ASSADI, AZAR	
	Examiner	Art Unit	
	Timothy J. Henn	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendments filed 11 April 2006 and 02 May 2006.
2. ☒ The allowed claim(s) is/are 1-8,13-21 and 23-26 renumbered in the order presented.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____ |
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EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Steven Laut (Reg. No. 47,736) on 13 June 2006.

Amend claims 1, 5 and 13 to read as follows:

Claim 1: An integrated pixel sensor structure comprising:

a set of at least three light sensitive diodes, the set of at least three light sensitive diodes including an i-layer placed on top of an n-layer, a p-layer placed on top of the i-layer, and a transparent conductor placed on top of the p-layer;

a protective layer coupled to the transparent conductor,

a set of separated echelon diffraction grating elements for producing complementary colors and to protect the set of at least three light sensitive diodes, the protective layer disposed between adjacent echelon diffraction grating elements of the set of separated echelon diffraction grating elements, the set of grating elements are placed on top of the transparent conductor, wherein the protective layer is of a sol gel material, the protective layer covers a portion of the transparent conductor not covered by the set of separated echelon diffraction grating elements, and the integrated pixel sensor structure not including a lens.

Claim 5: A system comprising:

an integrated pixel sensor structure having:

a set of at least three light sensitive diodes, the at least three light sensitive diodes including an i-layer placed on top of an n-layer, and a p-layer placed on top of the i-layer;

a protective layer coupled to a transparent conductor; and

a set of echelon diffraction grating elements for producing complementary colors and to protect the set of at least three light sensitive diodes, the set of echelon diffraction grating elements placed above the transparent conductor, the protective layer disposed between adjacent echelon diffraction grating elements of the set of echelon diffraction grating elements; and

a post capture signal processing unit coupled to the integrated pixel sensor, wherein the protective layer is of a sol gel material, the protective layer covers a portion of the transparent conductor not covered by the set of separated echelon diffraction grating elements, and the integrated pixel sensor structure not including a lens.

Claim 13: A method comprising:

providing a set of at least three light sensitive elements, the set of at least three light sensitive elements formed from placing an i-layer above an n-layer, placing a p-layer above the i-layer;

placing a transparent conductor on top of the p-layer;

placing a protective layer of a sol gel material on top of the transparent conductor, and

forming a set of echelon diffraction grating elements for producing complementary colors, the protective layer disposed between adjacent echelon diffraction grating elements of the set of echelon diffraction grating elements, wherein the set of echelon diffraction grating elements to protect the set of at least three light sensitive elements, and the set of echelon diffraction grating elements are placed above the transparent conductor, and the protective layer covers a portion of the transparent conductor not covered by the set of echelon diffraction grating elements, and the set of at least three light sensitive elements not including a lens.

2. The drawings were received on 02 May 2006. These drawings are acceptable.

3. The following is an examiner's statement of reasons for allowance: The prior art does not teach an integrated pixel sensor structure comprising a set of n-i-p light sensitive diodes including a transparent conductor placed on top of the p-layer; a protective layer coupled to the transparent conductor, a set of separated echelon diffraction grating elements for producing complementary colors and to protect the set of light sensitive diodes, the protective layer disposed between adjacent echelon diffraction grating elements, the protective layer covering a portion of the transparent conductor not covered by the set of echelon diffraction grating elements and the integrated pixel sensor structure not including a lens as claimed. While pixel sensors

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with n-i-p diodes (e.g. Thiel et al., US 6,114,739) and diffractive grating elements (e.g. Rostoker, US 5,760,834; Gal et al., US 5,600,486; Kato et al., US 2002/0030890) are known in the art, the specific combination claimed is not.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy J. Henn whose telephone number is (571) 272-7310. The examiner can normally be reached on M-F 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TJH
6/16/2006


TUAN HO
PRIMARY EXAMINER